International Journal of Economic Practices and Theories (IJEPT)
ISSN: 2247-7225
Volume 2026, Issue 1

A Study on Behavioural Biases and Financial Literacy with Reference to Financial Behaviour in Delhi, The Capital of India

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Abstract

Household financial decisions are shaped not only by what people know but also by how they think. This paper examines how behavioural biases and financial literacy relate to financial behaviour among residents of Delhi, India's capital. An integrative review of behavioural finance and financial literacy research is combined with primary survey data from 68 respondents, collected through a structured questionnaire using five-point scales. The scales showed high reliability (Cronbach's α between .894 and .961). Mean scores for behavioural bias (2.98), financial literacy (2.93) and financial behaviour (2.85) were close to the scale midpoint. Behavioural bias was negatively correlated with sound financial behaviour ($r = -.48$, $p < .001$), financial literacy was positively correlated with it ($r = .40$, $p < .001$), and together the two explained about 34 per cent of its variance. Financial literacy was not significantly related to behavioural bias ($r = -.17$, $p = .155$) and did not moderate the bias–behaviour relationship. Loss aversion showed the strongest link with weaker investment behaviour ($r = -.50$), and financial skills and financial attitude, but not financial knowledge, were linked to better behaviour. Male respondents reported significantly higher bias than female respondents, mainly in anchoring, familiarity and loss aversion, and financial behaviour differed marginally by occupation. The findings suggest that literacy and bias act as separate influences on behaviour, so education that builds knowledge should be supplemented by bias-aware approaches. Given the small sample and cross-sectional design, the results are indicative and call for larger studies in Delhi.

Keywords: Behavioural biases, financial literacy, financial behaviour, behavioural finance, household finance, Delhi, India

1. Introduction

Conventional finance theory pictures the individual as a rational decision-maker who weighs costs and benefits consistently and updates beliefs correctly. Decades of research in psychology and economics have shown that real decisions depart from this picture in systematic ways. Kahneman and Tversky (1979) showed that people evaluate outcomes as gains and losses relative to a reference point and feel losses more strongly than equivalent gains, while Tversky and Kahneman (1974) described the mental shortcuts, or heuristics, that people use when they judge probabilities under uncertainty. Behavioural finance builds on these insights to explain patterns in saving, investing and borrowing that standard models struggle to account for (Barberis & Thaler, 2003; Hirshleifer, 2015).

At the same time, financial decisions have become harder and more personal. Retirement provision has moved towards individual accounts, credit is available through instant digital channels, and investing is possible from a mobile phone within minutes. Coping with this environment requires financial literacy, commonly understood as the knowledge and skills needed to make sound financial decisions (Lusardi & Mitchell, 2014). Yet measured literacy is low in many countries. The Standard & Poor's Global Financial Literacy Survey found that roughly one in three adults worldwide could answer basic financial questions correctly, and only about 24 per cent of adults in India (Klapper, Lusardi & van Oudheusden, 2015). A later national survey reported a similarly modest figure of about 27 per cent for India (National Centre for Financial Education [NCFE], 2019).

Delhi, the National Capital Territory, offers a useful setting for studying these issues. According to the 2011 Census, it had a population of about 16.8 million (Office of the Registrar General and Census Commissioner, India, 2011), and it is among the most urbanised and densely populated regions of the country. Its residents include

salaried government employees, private-sector professionals, traders and small-business owners, gig and informal workers, students, and large numbers of migrants from other states. They also have unusually easy access to bank branches, brokerage services, insurance distribution and financial technology platforms. Such diversity in occupation, income stability and exposure to financial products makes it likely that both literacy and bias vary widely within the city.

Research has tended to treat financial literacy and behavioural bias as separate topics. Literacy studies ask what people know and how that knowledge relates to outcomes; behavioural studies ask how judgement errors distort decisions. A central question that links the two is whether knowing more actually protects people from their own biases. Evidence on this question is mixed (Baker, Kumar, Goyal & Gaur, 2019), and little of it concerns Delhi specifically. This paper therefore brings the two streams together, interprets them for the Delhi context, and tests a framework linking them using survey data from 68 respondents in Delhi.

2. Objectives

The study is guided by the following objectives:

i) To review the principal behavioural biases documented in individual financial decision-making.

ii) To examine how financial literacy is defined, measured and distributed, with particular reference to India.

iii) To synthesise existing evidence on the relationship between financial literacy and behavioural biases.

iv) To measure the levels of behavioural bias, financial literacy and financial behaviour among respondents in Delhi.

v) To examine the relationships among behavioural bias, financial literacy and financial behaviour, and whether they differ across demographic groups.

vi) To draw implications for financial education and policy and to identify research gaps.

3. Scope and Methodology

Scope. The study concerns the financial behaviour of adult individuals and households in Delhi (the National Capital Territory), in four areas: saving, investment, borrowing and credit use, and insurance and retirement planning. Because published empirical work specific to Delhi is limited, the review component also draws on research from other parts of India and from other economies.

Design. The study is descriptive, analytical and cross-sectional. It combines an integrative review of secondary sources, namely peer-reviewed articles, scholarly books, working papers and institutional reports (for example, those of the OECD, the National Centre for Financial Education and the Reserve Bank of India), with primary data from a questionnaire survey. Foundational contributions from the 1970s onwards were combined with more recent work through 2023, and sources were chosen for their relevance, clarity of measurement and standing in the field.

Data and instrument. Primary data were collected from 68 individuals in Delhi through a structured questionnaire. Respondents were selected through purposive sampling. The survey was conducted between January and May 2026. The questionnaire recorded gender, age group, education, occupation and monthly income, followed by 44 statements rated on a five-point scale from 1 to 5. Twenty statements measured behavioural bias across five dimensions (anchoring, overconfidence, herding, familiarity and loss aversion), twelve measured financial literacy across three dimensions (financial knowledge, financial skills and financial attitude), and twelve measured financial behaviour across three dimensions (budgeting and saving, spending and borrowing, and investment), each dimension having four statements. Dimension scores are the mean of their four statements, and each overall score is the mean of its dimension scores. Higher scores indicate stronger bias, higher literacy and better financial behaviour respectively.

Statistical analysis. The data were analysed in Python using SciPy and statsmodels. Reliability was assessed with Cronbach's alpha, with 0.70 as the conventional acceptance threshold (Nunnally, 1978). The sampling was purposive, so the respondents were chosen for their relevance to the study and not at random, and the results

should not be read as statistically representative of Delhi's population. The analysis comprised descriptive statistics, Pearson correlations (with Spearman correlations as a robustness check, because the composite scores departed modestly from normality), Welch t-tests and one-way analysis of variance with Kruskal–Wallis checks for group differences, and ordinary least squares regression. The moderating role of literacy was tested with a mean-centred interaction term (Aiken & West, 1991). All tests are two-tailed at the 5 per cent level. The hypotheses tested are stated in the Result and Discussion section.

4. Literature Review

Behavioural biases in financial decisions. Behavioural biases are systematic, predictable departures from rational judgement. Pompian (2012) distinguishes cognitive biases, which arise from faulty reasoning or memory, from emotional biases, which arise from feelings and impulses and are harder to correct through information alone. Among the most studied is overconfidence. Investors who overrate their own knowledge tend to trade more and earn less (Odean, 1999), a pattern that appears more strongly among men (Barber & Odean, 2001), and feedback from early successes can reinforce such confidence (Gervais & Odean, 2001). Loss aversion underlies the disposition effect, the tendency to sell winning investments too early and to hold on to losing ones (Shefrin & Statman, 1985; Odean, 1998). Mental accounting leads people to treat money differently depending on its source or label (Thaler, 1985), and status quo bias and inertia keep people in default options even when better ones exist (Samuelson & Zeckhauser, 1988; Madrian & Shea, 2001). Naive diversification, such as spreading money equally across whatever options are offered, is a further example (Benartzi & Thaler, 2001). Present bias leads people to favour immediate rewards over larger later ones, which weakens saving (Laibson, 1997). Kumar and Goyal (2015) reviewed the literature on investment decisions and found that herding, overconfidence, anchoring and loss aversion are among the biases most often reported.

Financial literacy. Definitions of financial literacy differ, but most combine knowledge, skills and the confidence to apply them (Remund, 2010; Huston, 2010). The OECD/INFE framework adds attitudes and reported behaviours to knowledge in a composite score (Atkinson & Messy, 2012; OECD, 2020). A widely used shortcut is a small set of questions on interest compounding, inflation and risk diversification (Lusardi & Mitchell, 2011). Literacy has been linked to a range of outcomes: stronger retirement planning (Lusardi & Mitchell, 2007), better portfolio diversification (Abreu & Mendes, 2010; von Gaudecker, 2015), lower costs of borrowing and fewer debt problems (Lusardi & Tufano, 2015), lower risk of mortgage default (Gerardi, Goette & Meier, 2013) and greater resilience to financial shocks (Klapper & Lusardi, 2020). Whether education can raise literacy and change behaviour remains debated. Fernandes, Lynch and Netemeyer (2014) found that interventions explain only a very small share of the variation in later behaviour, with effects that fade, whereas Kaiser and Menkhoff (2017) reported that financial education improves both knowledge and behaviour, with stronger effects on knowledge.

Linking literacy and bias. Several studies suggest that sophistication reduces, but does not remove, behavioural errors. Investors with greater sophistication and trading experience show a weaker disposition effect (Dhar & Zhu, 2006; Feng & Seasholes, 2005), and less sophisticated investors tend to hold less diversified portfolios (Goetzmann & Kumar, 2008). Exponential growth bias, the tendency to underestimate how fast interest compounds, distorts both saving and borrowing choices (Stango & Zinman, 2009), and it is precisely the type of error that numeracy-based education can address. At the same time, what people believe they know matters as much as what they actually know. Allgood and Walstad (2016) found that perceived literacy and actual literacy each affect financial behaviour, which implies that a gap between the two, a form of overconfidence, can lead people astray. Baker et al. (2019) examined how financial literacy and demographic characteristics relate to behavioural biases among individual investors and showed that the relationship is not uniform across biases.

Evidence from India. Indian studies generally report low and uneven literacy. Agarwalla, Barua, Jacob and Varma (2015) documented limited financial literacy among young working adults in urban India, with variation by demographic characteristics. Sivaramakrishnan, Srivastava and Rastogi (2017) found that both attitudinal factors and financial literacy influence participation in the stock market. National data point the same way (NCFE, 2019), and the National Strategy for Financial Education 2020–2025 sets out a plan to improve awareness across the country (Reserve Bank of India, 2020). What the Indian literature lacks is a combined treatment of literacy and bias at city level, and Delhi, despite its size and diversity, has received little dedicated attention.

5. Result and Discussion

This section first interprets the reviewed literature, then states the hypotheses and reports the analysis of the survey data. Table 1 brings together the main biases, their typical manifestation in financial decisions, and the role that literacy is expected to play.

Table 1. Behavioural biases, their manifestation in financial decisions, and the expected role of financial literacy

Bias	Typical manifestation	Expected role of financial literacy	Representative sources
Overconfidence	Excessive trading; underestimating risk; poor diversification	Limited; partial knowledge may raise confidence faster than accuracy	Odean (1999); Barber & Odean (2001); Allgood & Walstad (2016)
Loss aversion and disposition effect	Selling winners early and holding losers	Moderate; sophistication and experience attenuate but do not remove it	Shefrin & Statman (1985); Odean (1998); Dhar & Zhu (2006)
Herding	Following peers or online trends in investment choices	Weak; driven by social and emotional influence	Kumar & Goyal (2015); Baker et al. (2019)
Mental accounting	Treating money differently by source or label	Moderate; awareness of fungibility can help	Thaler (1985)
Status quo bias and inertia	Staying with defaults; delaying changes to plans	Moderate; works best alongside well-designed defaults	Samuelson & Zeckhauser (1988); Madrian & Shea (2001)
Naive diversification	Spreading money evenly across options offered	Strong; conceptual knowledge of diversification applies directly	Benartzi & Thaler (2001); Goetzmann & Kumar (2008)
Exponential growth bias	Underestimating the effect of compounding on savings and debt	Strong; numeracy-based education addresses it directly	Stango & Zinman (2009)
Present bias	Preferring immediate spending to future saving	Weak to moderate; commitment devices may help more than knowledge	Laibson (1997)

Source: Compiled by the authors from the studies cited.

Where literacy helps most. The evidence suggests that literacy is most useful against biases that grow out of knowledge gaps. People who understand compounding are less likely to underestimate the cost of a revolving credit balance or the reward for starting to save early, and people who grasp the idea of diversification are less likely to divide money mechanically among available options or concentrate it in one asset. For these biases, education that builds numeracy and conceptual understanding has a plausible and fairly direct mechanism of action.

Where literacy helps less. Literacy appears to be a weaker protection against biases that arise from emotion and social influence. Loss aversion, regret, herding and present bias are felt, not merely computed, and a person can know the right rule and still break it under stress or peer pressure. Overconfidence is a special case, because partial knowledge can itself raise confidence faster than it raises accuracy, which is consistent with the finding that perceived literacy affects behaviour independently of tested literacy (Allgood & Walstad, 2016).

The Delhi context. The features of Delh described earlier suggest several channels through which bias may

operate. Easy access to app-based investing and widely circulated online commentary may encourage herding and overtrading among new investors. Salaried employees with employer-provided savings and pension arrangements may show inertia and status quo bias. Traders and business owners may be prone to overconfidence and to mental accounting between business and household money, and wide availability of consumer credit may interact with present bias to raise borrowing costs. These channels are drawn from the literature. The survey measures five specific biases and so allows some of them to be examined, but it does not capture the platform, occupational or product-level channels directly.

Conceptual framework and hypotheses. The framework treats demographic characteristics as influences on financial literacy, behavioural bias and financial behaviour. Literacy and bias are expected to bear on financial behaviour in saving, investing, borrowing and planning, and literacy may also weaken the harm that bias does to behaviour. Five hypotheses follow.

H1. Financial literacy is negatively related to behavioural bias.

H2. Behavioural bias is negatively related to sound financial behaviour.

H3. Financial literacy is positively related to sound financial behaviour.

H4. Financial literacy moderates the relationship between behavioural bias and financial behaviour, so that the harm done by bias is smaller at higher levels of literacy.

H5. Behavioural bias, financial literacy and financial behaviour differ across demographic groups (gender, age, education, occupation and income).

Respondent profile. Table 2 describes the 68 respondents. Men formed 54.4 per cent and women 44.1 per cent of the sample, and one respondent preferred not to state gender. The largest age group was 35–44 years (29.4 per cent), and 44.1 per cent were below 35. Graduates were the largest educational group (35.3 per cent), followed by post-graduates and holders of professional degrees (22.1 per cent). Employed persons in the private or government sector made up 39.7 per cent, and business owners and the self-employed 23.5 per cent. The most common income band was Rs. 25,001 to Rs. 50,000 (32.4 per cent).

Table 2. Profile of respondents (N = 68)

Variable	Category	Frequency	Per cent
Gender	Male	37	54.4
	Female	30	44.1
	Prefer not to say	1	1.5
Age group (years)	18-24	15	22.1
	25-34	15	22.1
	35-44	20	29.4
	45-54	14	20.6
	55 & Above	4	5.9
Education	SSC & Below	6	8.8
	HSC	10	14.7
	Diploma	12	17.6
	Graduate	24	35.3
	Post-graduate / professional degree	15	22.1
	Other	1	1.5
Occupation	Employed (Private/Government)	27	39.7
	Business/Self-Employed	16	23.5
	Student	9	13.2
	Home-maker	7	10.3

Variable	Category	Frequency	Per cent
	Retired	5	7.4
	Unemployed	4	5.9
Monthly income	Rs.25,000 & Below	16	23.5
	Rs.25,001 to Rs.50,000	22	32.4
	Rs.50,001 to Rs.75,000	19	27.9
	Rs.75,000 & Above	11	16.2

Source: Primary survey data.

Reliability and descriptive statistics. Table 3 shows that every dimension and every overall scale exceeds the 0.70 threshold by a wide margin, with alpha values from .894 to .961. The very high value for the 20-item bias scale (.961) may point to some overlap between items, which future work could examine. Mean scores were moderate: 2.98 for behavioural bias, 2.93 for financial literacy and 2.85 for financial behaviour, all close to the midpoint of 3. Among the bias dimensions, loss aversion had the highest mean (3.26), followed by familiarity (3.09), herding (3.04) and overconfidence (2.96), while anchoring had the lowest (2.55). Among the literacy dimensions, financial knowledge scored highest (3.19), followed by financial skills (2.94), and financial attitude lowest (2.64). Among the behaviour dimensions, budgeting and saving scored highest (3.06), while investment (2.75) and spending and borrowing (2.73) were lower. The respondents therefore appear to hold a middling level of literacy and to show a moderate degree of bias, with most room for improvement in financial attitude and in spending, borrowing and investment behaviour.

Table 3. Descriptive statistics and reliability of the scales

Construct	Items	Mean	SD	Min.	Max.	Cronbach's α
Anchoring	4	2.55	1.27	1.00	5.00	.926
Overconfidence	4	2.96	1.22	1.00	5.00	.907
Herding	4	3.04	1.24	1.00	5.00	.920
Familiarity	4	3.09	1.16	1.00	5.00	.894
Loss aversion	4	3.26	1.30	1.00	5.00	.926
Behavioural bias (overall)	**20**	**2.98**	**1.05**	**1.05**	**4.80**	**.961**
Financial knowledge	4	3.19	1.11	1.00	5.00	.894
Financial skills	4	2.94	1.21	1.00	5.00	.898
Financial attitude	4	2.64	1.24	1.00	5.00	.919
Financial literacy (overall)	**12**	**2.93**	**0.96**	**1.17**	**4.83**	**.913**
Budgeting and saving	4	3.06	1.18	1.00	5.00	.900
Spending and borrowing	4	2.73	1.19	1.00	5.00	.908
Investment	4	2.75	1.25	1.00	5.00	.914
Financial behaviour (overall)	**12**	**2.85**	**1.05**	**1.08**	**5.00**	**.939**

Note: All items were scored on a five-point scale. Higher scores indicate stronger bias, higher literacy and better financial behaviour respectively.

Relationships among the constructs. Table 4 reports the correlations among the three overall scores. Behavioural bias was negatively and significantly correlated with financial behaviour ($r = -.48$, $p < .001$), and financial literacy was positively and significantly correlated with financial behaviour ($r = .40$, $p < .001$). The correlation between

financial literacy and behavioural bias was weak and not significant (r = −.17, p = .155). Spearman correlations gave the same pattern (bias and behaviour, rs = −.48; literacy and behaviour, rs = .38; bias and literacy, rs = −.17, p = .163).

Table 4. Correlation matrix of the three composite scales (Pearson r)

Variable	1	2	3
1. Behavioural bias	1		
2. Financial literacy	−.174	1	
3. Financial behaviour	−.479***	.404***	1

*Note: N = 68. * p < .05, ** p < .01, *** p < .001 (two-tailed).*

Table 5 shows the same pattern at the level of dimensions. All fifteen correlations between the bias dimensions and the behaviour dimensions were negative and significant at the 5 per cent level, with magnitudes between 0.24 and 0.50. The strongest was between loss aversion and investment behaviour (r = −.50), followed by familiarity and budgeting and saving (r = −.46) and anchoring and budgeting and saving (r = −.45). By contrast, the correlations between the bias dimensions and the literacy dimensions were small, ranged from .04 to −.23, and none was significant.

Table 5. Correlations of the bias dimensions with the literacy and behaviour dimensions (Pearson r)

Bias dimension	Financial knowledge	Financial skills	Financial attitude	Budgeting and saving	Spending and borrowing	Investment
Anchoring	−.12	−.14	−.06	−.45***	−.32**	−.42***
Overconfidence	.04	−.17	−.06	−.35**	−.24*	−.28*
Herding	−.11	−.17	−.06	−.26*	−.30*	−.36**
Familiarity	−.05	−.23	−.08	−.46***	−.30*	−.39***
Loss aversion	−.15	−.22	−.20	−.37**	−.31*	−.50***

*Note: N = 68. * p < .05, ** p < .01, *** p < .001 (two-tailed). The first three columns are literacy dimensions and the last three are financial behaviour dimensions.*

Table 6 looks at the literacy dimensions. Financial skills and financial attitude were significantly and positively correlated with all three areas of financial behaviour (r between .27 and .43). Financial knowledge, by contrast, was not significantly correlated with any of them (r between .11 and .17). In this sample, therefore, the ability and willingness to act on financial matters are more closely tied to behaviour than knowledge alone.

Table 6. Correlations between literacy dimensions and behaviour dimensions (Pearson r)

Literacy dimension	Budgeting and saving	Spending and borrowing	Investment
Financial knowledge	.11	.14	.17
Financial skills	.34**	.27*	.39***
Financial attitude	.43***	.36**	.33**

*Note: N = 68. * p < .05, ** p < .01, *** p < .001 (two-tailed).*

Differences across demographic groups. Table 7 compares the three overall scores across demographic groups. Gender showed a significant difference in behavioural bias: men scored 3.25 on average and women 2.63 (t(63.7) = 2.53, p = .014). Gender did not differ significantly in literacy or behaviour. Table 8 shows that the difference in

bias was concentrated in three dimensions: men scored higher than women on anchoring (2.91 against 2.11, p = .008), familiarity (3.43 against 2.62, p = .004) and loss aversion (3.59 against 2.88, p = .029), while the differences in overconfidence (p = .078) and herding (p = .315) were not significant. Occupation showed a borderline difference in financial behaviour ($F(5,62) = 2.37$, p = .049). Business owners and the self-employed (3.42) and retired respondents (3.28) scored highest, and home-makers (2.13) lowest. This result should be treated with caution, because the Kruskal–Wallis check was not significant at the 5 per cent level (p = .061) and some occupational groups have very few respondents. No significant differences were found by age, education or income.

Table 7. Differences in bias, literacy and behaviour across demographic groups

Variable	Test	Behavioural bias	Financial literacy	Financial behaviour
Gender	Welch t	$t(63.7) = 2.53$, p = .014*	$t(61.9) = -0.26$, p = .799	$t(64.8) = 0.34$, p = .732
Age group	ANOVA F	$F(4,63) = 1.27$, p = .293	$F(4,63) = 1.12$, p = .353	$F(4,63) = 0.88$, p = .482
Education	ANOVA F	$F(4,62) = 2.07$, p = .095	$F(4,62) = 0.37$, p = .829	$F(4,62) = 0.28$, p = .888
Occupation	ANOVA F	$F(5,62) = 1.27$, p = .287	$F(5,62) = 0.47$, p = .797	$F(5,62) = 2.37$, p = .049*
Monthly income	ANOVA F	$F(3,64) = 1.09$, p = .362	$F(3,64) = 0.86$, p = .466	$F(3,64) = 0.59$, p = .622

*Note: * p < .05. Gender comparison covers male and female respondents only (one respondent preferred not to say); education comparison excludes the single respondent in the "Other" category.*

Table 8. Gender differences in the five bias dimensions (mean scores)

Bias dimension	Male (n = 37)	Female (n = 30)	Welch t	p
Anchoring	2.91	2.11	2.74	.008**
Overconfidence	3.20	2.67	1.79	.078
Herding	3.14	2.84	1.01	.315
Familiarity	3.43	2.62	2.95	.004**
Loss aversion	3.59	2.88	2.24	.029*

*Note: * p < .05, ** p < .01. One respondent who preferred not to state gender is excluded.*

Regression analysis. Table 9 reports the regression results. In Model 1, behavioural bias ($\beta = -.42$, p < .001) and financial literacy ($\beta = .33$, p = .002) were both significant predictors of financial behaviour, and together they explained 33.5 per cent of its variance (adjusted $R^2 = 0.315$). Bias had the larger standardised effect. In Model 2, the interaction between bias and literacy was not significant (B = 0.123, p = .325) and added only 1.0 percentage points of explained variance, so there is no evidence that literacy softens the effect of bias. In Model 3, financial literacy explained only 3.0 per cent of the variance in bias and was not a significant predictor (p = .155). Multicollinearity was not a concern, with variance inflation factors at or below 1.04.

Table 9. Regression results

Predictor	B	SE	β	t	p
Model 1: Financial behaviour as outcome					
Behavioural bias	−0.425	0.103	−.42	−4.11	< .001
Financial literacy	0.362	0.113	.33	3.21	.002
$R^2 = 0.335$; adj. $R^2 = 0.315$; $F(2, 65) = 16.40$, $p < .001$					
Model 2: Moderation (mean-centred)					
Behavioural bias	−0.433	0.104	−.43	−4.17	< .001
Financial literacy	0.366	0.113	.33	3.25	.002
Bias × literacy	0.123	0.124	.12	0.99	.325
$R^2 = 0.345$; adj. $R^2 = 0.315$; $\Delta R^2 = 0.010$; $F(3, 64) = 11.26$, $p < .001$					
Model 3: Behavioural bias as outcome					
Financial literacy	−0.190	0.132	−.17	−1.44	.155
$R^2 = 0.030$; $F(1, 66) = 2.07$, $p = .155$					

Note: N = 68. B = unstandardised coefficient; β = standardised coefficient. Variance inflation factors were below 1.04 in all models.

Table 10 repeats the regression for each area of financial behaviour. Bias and literacy were significant predictors in all three, explaining 28.5 per cent of the variance in budgeting and saving, 18.9 per cent in spending and borrowing, and 30.0 per cent in investment, and the standardised effect of bias was the larger of the two in each case.

Table 10. Regression of each financial behaviour dimension on behavioural bias and financial literacy

Outcome	β: Behavioural bias	β: Financial literacy	R^2	F(2, 65)
Budgeting and saving	−.39***	.30**	0.285	12.98
Spending and borrowing	−.30**	.27*	0.189	7.58
Investment	−.41***	.30**	0.300	13.94

*Note: N = 68. Entries are standardised coefficients. * p < .05, ** p < .01, *** p < .001. All three models are significant at p < .01.*

Hypothesis testing. Table 11 summarises the decisions. H2 and H3 are supported, H1 and H4 are not, and H5 is supported only in part.

Table 11. Summary of hypothesis testing

No.	Hypothesis	Key statistic	Decision
H1	Financial literacy is negatively related to behavioural bias	$r = -.17$, $p = .155$	Not supported
H2	Behavioural bias is negatively related to sound financial behaviour	$r = -.48$, $p < .001$	Supported
H3	Financial literacy is positively related to sound financial behaviour	$r = .40$, $p < .001$	Supported
H4	Financial literacy moderates the bias–behaviour relationship	$B = 0.123$, $p = .325$	Not supported
H5	Bias, literacy and behaviour differ across demographic groups	Gender and bias, $p = .014$; occupation and behaviour, $p = .049$	Partly supported

Discussion. The results fit the broader literature in several respects. First, the absence of a significant link between literacy and bias supports the view that knowing more does not by itself remove behavioural errors, and that the relationship between the two is not uniform (Baker et al., 2019). Second, literacy and bias each bear on behaviour independently: respondents with higher literacy reported better financial behaviour, and respondents with stronger bias reported worse behaviour, whatever their literacy. This is consistent with research that links literacy to better saving, borrowing and planning outcomes (Lusardi & Mitchell, 2014) while showing that knowledge is only one part of what drives decisions. Third, the finding that men reported more bias than women is in line with evidence that men tend to trade and decide with more confidence (Barber & Odean, 2001), although here the difference was significant for anchoring, familiarity and loss aversion and not for overconfidence or herding. Fourth, the strong link between loss aversion and weaker investment behaviour matches the long-standing finding that losses weigh more heavily than gains in investment decisions (Kahneman & Tversky, 1979; Shefrin & Statman, 1985), and the weakness of knowledge as a predictor of behaviour, compared with skills and attitude, supports the view that knowing is not the same as doing (Lusardi & Mitchell, 2014). Fifth, the lack of a moderating effect suggests that, in this sample, literacy does not shield people from the harmful effects of bias; this is consistent with the argument that emotion-driven and habit-driven biases are not easily corrected by information alone, and that choice design, such as sensible defaults, may be needed alongside education (Thaler & Sunstein, 2008; Madrian & Shea, 2001). These results come from a small, cross-sectional sample of self-reported responses, so they describe associations and do not establish cause.

6. Findings

The review and the survey together yield the following principal findings.

1. Respondents in Delhi showed moderate levels of behavioural bias (2.98), financial literacy (2.93) and sound financial behaviour (2.85) on a five-point scale, leaving clear room for improvement in all three.

2. Behavioural bias was strongly and negatively associated with financial behaviour ($r = -.48$), and the association held for every one of the fifteen pairings of the five biases with the three areas of behaviour. Loss aversion was the most strongly linked to weaker investment behaviour ($r = -.50$).

3. Financial literacy was positively associated with financial behaviour ($r = .40$), but the link came through financial skills and financial attitude and not through financial knowledge. Bias and literacy together explained about 34 per cent of the variation in behaviour, with bias having the larger effect.

4. Financial literacy was not significantly related to behavioural bias ($r = -.17$) and did not moderate the effect of bias on behaviour. Literacy therefore appears to improve behaviour without correcting bias, which agrees with the literature.

5. Men reported significantly higher bias than women, mainly in anchoring, familiarity and loss aversion. Financial behaviour differed marginally by occupation, and no significant differences were found by age, education or income.

6. Education alone is unlikely to be enough. The evidence points towards bias-aware, practice-based education combined with choice design, such as sensible defaults and well-timed prompts, that makes good decisions easier.

Implications. For educators and training bodies, the findings favour curricula that include self-assessment, scenarios involving losses and market stress, and practical exercises, in addition to the standard coverage of interest, inflation and risk. For regulators and platform providers, they favour disclosures and interface designs that reduce impulsive decisions and make costs and risks clear. For advisers, they underline the value of helping clients recognise their own tendencies, especially among men, who reported stronger bias here, and not only of supplying products. For employers, they suggest that default savings and insurance options should be designed with the same care as awareness programmes.

7. Limitations and Research Gaps

The study has limitations that should be borne in mind. The survey sample of 68 respondents was chosen purposively, is small and is drawn from a city of many millions, so the results cannot be generalised to all of Delhi, and several subgroups (for example, retired and unemployed respondents) are very small, which limits the power and reliability of group comparisons. The data are self-reported, which leaves room for social desirability and for respondents' over- or under-estimation of their own knowledge, and the design is cross-sectional, so causal direction cannot be established. The reliability coefficients are very high, which may reflect overlapping items. The study examines five biases and three areas of behaviour, so it cannot separate the effects of individual platforms, products or occupations. The review component is selective and integrative and does not claim to be an exhaustive systematic review.

Several gaps emerge. First, larger and more representative samples from Delhi are needed, ideally with probability sampling and validated instruments such as the OECD/INFE questions for literacy. Second, longitudinal and experimental designs, including field experiments on bias-aware education, are needed to test causal effects. Third, objective measures of literacy and of behaviour, such as actual portfolio or borrowing records, should supplement self-reports. Fourth, the roles of digital platforms and social media in shaping herding and overconfidence have not been adequately studied in the Indian setting. Fifth, groups such as women, gig and informal workers, and migrants need more attention, since their circumstances differ from those of the salaried investors who dominate many samples.

8. Conclusion

This paper examined how behavioural biases and financial literacy relate to financial behaviour in Delhi, combining a review of the literature with survey data from 68 respondents. The review showed that financial literacy improves many financial outcomes but does not by itself correct the systematic judgement errors to which people are prone. The survey results are consistent with this. Behavioural bias was strongly and negatively related to financial behaviour ($r = -.48$), financial literacy was positively related to it ($r = .40$), and the two together explained about 34 per cent of its variance. Literacy was not significantly related to bias and did not moderate its effect, which suggests that the two operate as separate influences. Men reported higher bias than women, while age, education and income made no significant difference in this sample.

The practical message is that building financial knowledge remains worthwhile but is not sufficient. Financial education in Delhi should address how people think and feel about money, through self-assessment, realistic scenarios and practice, and it should be supported by sensible product and platform design. The conclusions are limited by the small sample and cross-sectional design, and they should be tested on larger and more representative samples. Treating financial knowledge and financial psychology as parts of the same problem is likely to yield better guidance for individuals and for policy than treating either alone.

References

[1] Abreu, M., & Mendes, V. (2010). Financial literacy and portfolio diversification. Quantitative Finance,

10(5), 515–528.

[2] Agarwalla, S. K., Barua, S. K., Jacob, J., & Varma, J. R. (2015). Financial literacy among working young in urban India. World Development, 67, 101–109.

[3] Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Sage.

[4] Allgood, S., & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. Economic Inquiry, 54(1), 675–697.

[5] Atkinson, A., & Messy, F.-A. (2012). Measuring financial literacy: Results of the OECD/INFE pilot study (OECD Working Papers on Finance, Insurance and Private Pensions, No. 15). OECD Publishing.

[6] Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2019). How financial literacy and demographic variables relate to behavioral biases. Managerial Finance, 45(1), 124–146.

[7] Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. Quarterly Journal of Economics, 116(1), 261–292.

[8] Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. In G. M. Constantinides, M. Harris, & R. M. Stulz (Eds.), Handbook of the Economics of Finance (Vol. 1B, pp. 1053–1128). Elsevier.

[9] Benartzi, S., & Thaler, R. H. (2001). Naive diversification strategies in defined contribution saving plans. American Economic Review, 91(1), 79–98.

[10] Dhar, R., & Zhu, N. (2006). Up close and personal: Investor sophistication and the disposition effect. Management Science, 52(5), 726–740.

[11] Feng, L., & Seasholes, M. S. (2005). Do investor sophistication and trading experience eliminate behavioral biases in financial markets? Review of Finance, 9(3), 305–351.

[12] Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. Management Science, 60(8), 1861–1883.

[13] Gerardi, K., Goette, L., & Meier, S. (2013). Numerical ability predicts mortgage default. Proceedings of the National Academy of Sciences, 110(28), 11267–11271.

[14] Gervais, S., & Odean, T. (2001). Learning to be overconfident. Review of Financial Studies, 14(1), 1–27.

[15] Goetzmann, W. N., & Kumar, A. (2008). Equity portfolio diversification. Review of Finance, 12(3), 433–463.

[16] Hirshleifer, D. (2015). Behavioral finance. Annual Review of Financial Economics, 7, 133–159.

[17] Huston, S. J. (2010). Measuring financial literacy. Journal of Consumer Affairs, 44(2), 296–316.

[18] Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263–291.

[19] Kaiser, T., & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? World Bank Economic Review, 31(3), 611–630.

[20] Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. Financial Management, 49(3), 589–614.

[21] Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). Financial literacy around the world: Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey. World Bank Development Research Group.

[22] Kumar, S., & Goyal, N. (2015). Behavioural biases in investment decision making: A systematic literature review. Qualitative Research in Financial Markets, 7(1), 88–108.

[23] Laibson, D. (1997). Golden eggs and hyperbolic discounting. Quarterly Journal of Economics, 112(2), 443–

477.

[24] Lusardi, A., & Mitchell, O. S. (2007). Baby Boomer retirement security: The roles of planning, financial literacy, and housing wealth. Journal of Monetary Economics, 54(1), 205–224.

[25] Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: An overview. Journal of Pension Economics and Finance, 10(4), 497–508.

[26] Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5–44.

[27] Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. Journal of Pension Economics and Finance, 14(4), 332–368.

[28] Madrian, B. C., & Shea, D. F. (2001). The power of suggestion: Inertia in 401(k) participation and savings behavior. Quarterly Journal of Economics, 116(4), 1149–1187.

[29] National Centre for Financial Education. (2019). NCFE Financial Literacy and Inclusion Survey (NCFE-FLIS) 2019. NCFE, Mumbai.

[30] Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.

[31] Odean, T. (1998). Are investors reluctant to realize their losses? Journal of Finance, 53(5), 1775–1798.

[32] Odean, T. (1999). Do investors trade too much? American Economic Review, 89(5), 1279–1298.

[33] OECD. (2020). OECD/INFE 2020 international survey of adult financial literacy. OECD Publishing.

[34] Office of the Registrar General and Census Commissioner, India. (2011). Census of India 2011: Provisional population totals, NCT of Delhi. Government of India.

[35] Pompian, M. M. (2012). Behavioral finance and wealth management: How to build optimal portfolios that account for investor biases (2nd ed.). John Wiley & Sons.

[36] Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. Journal of Consumer Affairs, 44(2), 276–295.

[37] Reserve Bank of India. (2020). National Strategy for Financial Education 2020–2025. Reserve Bank of India, Mumbai.

[38] Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. Journal of Risk and Uncertainty, 1(1), 7–59.

[39] Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. Journal of Finance, 40(3), 777–790.

[40] Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). Attitudinal factors, financial literacy, and stock market participation. International Journal of Bank Marketing, 35(5), 818–841.

[41] Stango, V., & Zinman, J. (2009). Exponential growth bias and household finance. Journal of Finance, 64(6), 2807–2849.

[42] Thaler, R. (1985). Mental accounting and consumer choice. Marketing Science, 4(3), 199–214.

[43] Thaler, R. H., & Sunstein, C. R. (2008). Nudge: Improving decisions about health, wealth, and happiness. Yale University Press.

[44] Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. Science, 185(4157), 1124–1131.

[45] von Gaudecker, H.-M. (2015). How does household portfolio diversification vary with financial literacy and financial advice? Journal of Finance, 70(2), 489–507.